

Exhibit W

Exhibit A-15

**Invalidity of U.S. Patent No. 6,757,068 (“’068 Patent”)¹ under Pre-AIA Section 102 or Section 103 in view of
InterSense IS-300 Motion Tracker (“InterSense IS-300”)²**

InterSense IS-300 was publicly available at least as of 1996. Plaintiffs assert a priority date of January 28, 2000 for the ’068 Patent. Even assuming that the ’068 Patent is entitled to this priority date, InterSense IS-300 qualifies as prior art under at least pre-AIA Sections 102(a) and (b) to the ’068 Patent.

As described herein, the asserted claims of the ’068 Patent are invalid (a) under one or more sections of 35 U.S.C. § 102 as anticipated expressly or inherently by InterSense IS-300 (including the documents incorporated into InterSense IS-300 by reference) and (b) under 35 U.S.C. § 103 as obvious in view of InterSense IS-300 standing alone and, additionally, in combination with the knowledge of one of ordinary skill in the art, and/or other prior art, including but not limited to the prior art identified in Defendants’ Invalidity Contentions and the prior art described in the claim charts attached in Exhibits A-1 – A-29. With respect to the proposed modifications to InterSense IS-300, as of the priority date of the ’068 Patent, such modification would have been obvious to try, an obvious combination of prior art elements according to known methods to yield predictable results, a simple substitution of one known element for another to obtain predictable results, a use of known techniques to improve a similar devices or method in the same way, an application of a known technique to a known device or method ready for improvement to yield predictable results, a variation of a known work in one field of endeavor for use in either the same field or a different one based on design incentives or other market forces with variations that are predictable to one of ordinary skill in the art, and/or obvious in view of teachings, suggestions, and motivations in the prior art that would have led one of ordinary skill to modify or combine the prior art references.

¹ Discovery in this case is ongoing and, accordingly, this invalidity chart is not to be considered final. Defendants have conducted the invalidity analysis herein without having fully undergone claim construction and a *Markman* hearing. By charting the prior art against the claim(s) herein, Defendants are not admitting nor agreeing to Plaintiffs’ interpretation of the claims at issue in this case. Additionally, these charts provide representative examples of portions of the charted references that disclose the indicated limitations under Plaintiffs’ application of the claims; additional portions of these references other than the representative examples provided herein may also disclose the indicated limitation(s) and Defendants contend that the asserted claim(s) are invalid in light of the charted reference(s) as a whole. Defendants reserve the right to rely on additional citations or sources of evidence that also may be applicable, or that may become applicable in light of claim construction, changes in Plaintiffs’ infringement contentions, and/or information obtained during discovery as the case progresses. Further, by submitting these invalidity contentions, Defendants do not waive and hereby expressly reserve their right to raise other invalidity defenses, including but not limited to defenses under Sections 101 and 112. Defendants reserve the right to amend or supplement this claim chart at a later date, including after the Court’s order construing disputed claim terms.

² The claim limitations described herein were disclosed by the InterSense IS-300 as of the earliest priority date of the ’068 patent. For instance: IS-300 Pro Precision Motion Tracker, INTERSENSE (last updated June 4, 2002), <https://web.archive.org/web/20021017040949/http://intersense.com/products/prec/is300/is300pro.htm> (“InterSense IS-300 Ex. 1”); IS-300 Precision Motion Tracker, INTERSENSE, <http://www.mindflux.com.au/products/isense/is300.pdf> (“InterSense IS-300 Ex. 2”); User Manual for IS-300 and IS-300 Pro Systems Firmware versions 3.0161 and above, INTERSENSE (1999), <http://www.mindflux.com.au/products/isense/is300.pdf> (“InterSense IS-300 Ex. 3”); and IS-300 Precision Motion Tracker, INTERSENSE (Nov. 12, 1997), <https://web.archive.org/web/19980119142206/http://www.isense.com:80/products.html> (“InterSense IS-300 Ex. 4”).

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All cross-references should be understood to include material that is cross-referenced within the cross-reference. Where a particular figure is cited, the citation should be understood to encompass the caption and description of the figure as well as any text relating to or describing the figure. Conversely, where particular text referring to a figure is cited, the citation should be understood to include the figure as well.

A. INDEPENDENT CLAIM 1

CLAIM 1	InterSense IS-300
[1.pre] A method comprising:	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, a method.</p> <p>No party has yet asserted that the preamble is limiting, nor has the Court construed the preamble as limiting. However, to the extent that the preamble is limiting, it is disclosed by InterSense IS-300.</p> <p>In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

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CLAIM 1	InterSense IS-300
	<p>12/8/21, 4:14 PM IS-300 Pro Precision Motion Tracker</p> <p>The Wayback Machine - https://web.archive.org/web/20021017040949/http://intersense.com:80/products/prec/is...</p> <div style="display: flex; justify-content: space-between;"> <div data-bbox="506 293 682 987" style="width: 25%;">  <p>COMPANY</p> <p>APPLICATIONS</p> <p>PRODUCTS</p> <p>NEWS</p> <p>SUPPORT</p> <p>CONTACT US</p> <p>HOME</p> <p>INTERSENSE Tel 781 270 0090 Fax 781 229 8995 info@ISENSE.com</p> </div> <div data-bbox="703 293 1365 987" style="width: 75%;"> <div style="display: flex; justify-content: space-between;"> <div> <p>INTERSENSE</p> <p>PRODUCTS InertiaCube2 IS-300 Pro IS-600 Mark 2 IS-600 Mark 2 Plus IS-900 INTERTRAX2 </p> <p>INTERTRAX2 Headsets Distributors</p> </div> <div> <p>WE BRING 3D TO LIFE</p> </div> </div> <p>IS-300 Pro Precision Motion Tracker</p> <div style="border: 2px solid red; padding: 5px;"> <p>THE WORLD'S FASTEST AND SMOOTHEST HEAD AND HAND ORIENTATION TRACKER.</p> </div> <p><i>Make slow, jittery virtual environments history. Now high-fidelity tracking with the ease-of-use, freedom and robustness of sourceless inertial technology is here. Enhance simulator performance and realism with the IS-300 from InterSense.</i></p>  <p>DOWNLOAD THE PDF FILE FOR ADDITIONAL INFORMATION AND SPECIFICATIONS </p> <ul style="list-style-type: none"> Fast & Smooth Motion Prediction Immune to Interference Unlimited Range </div> </div>

InterSense IS-300 Ex. 1.

Exhibit A-15

CLAIM 1

InterSense IS-300



- Fast & Smooth
- Motion Prediction
- Immune to Interference
- Unlimited Range

IS-300 Precision Motion Tracker

The world's fastest and smoothest head and hand orientation tracker.

Slow, jittery virtual environments are now a thing of the past. For the first time, high-fidelity tracking with all the ease-of-use, freedom and robustness inherent in sourceless inertial technology is now possible. Simulator performance and realism are greatly enhanced with the IS-300 from InterSense.

Jitter-Free.
The InterSense IS-300 tracker virtually eliminates the jitter common to other systems. This has been a major deficiency and source of simulator sickness in immersive head-mounted display applications.

Fast Response.
The InterSense IS-300 PRO offers industry leading update rates of up to 500 Hz, for the world's lowest latency tracking. Tracker-induced lag is removed from your virtual environment.


Distortion-Free.
Our patented inertial sensing technology is not susceptible to the electromagnetic interference you've come to expect from competitive tracking technologies. So the InterSense IS-300 offers smooth, steady response, even in noisy, metal-cluttered environments.

Unlimited Range.
The IS-300 is completely sourceless. This means no setup, no line-of-sight constraints and virtually unlimited operating range. The signal processor is small enough to wear on a belt for tetherless application.

Motion Prediction.
The IS-300 PRO can predict motion up to 50 ms in the future, which compensates for graphics rendering delays and further contributes to eliminating simulator lag. InterSense is the *only* company to employ the proven benefits of inertial angular rate and acceleration sensors to provide accurate feed-forward motion prediction.

No Slop or Drift.
InterSense's proprietary micro-machined inertial sensor unit and signal processing virtually eliminates the sloshy response common to inclinometers and the accumulation of drift error that plagues ordinary gyroscopes.

Software Compatibility.
If your application uses software that supports industry-standard trackers, you won't have to change a line of code to use the IS-300!

 INTERSENSE

InterSense IS-300 Ex. 2.


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CLAIM 1	InterSense IS-300
	<p><i>See also</i> Defendants' Invalidity Contentions for further discussion.</p>
<p>[1.a] mounting a sourceless orientation tracker on a user's head, and</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, mounting a sourceless orientation tracker on a user's head. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <p>12/8/21, 4:14 PM IS-300 Pro Precision Motion Tracker The Wayback Machine - https://web.archive.org/web/20021017040949/http://intersense.com:80/products/prec/is...</p>  <p>InterSense IS-300 Ex. 1.</p>

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CLAIM 1

InterSense IS-300



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- Immune to Interference
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 INTERSENSE

InterSense IS-300 Ex. 2.

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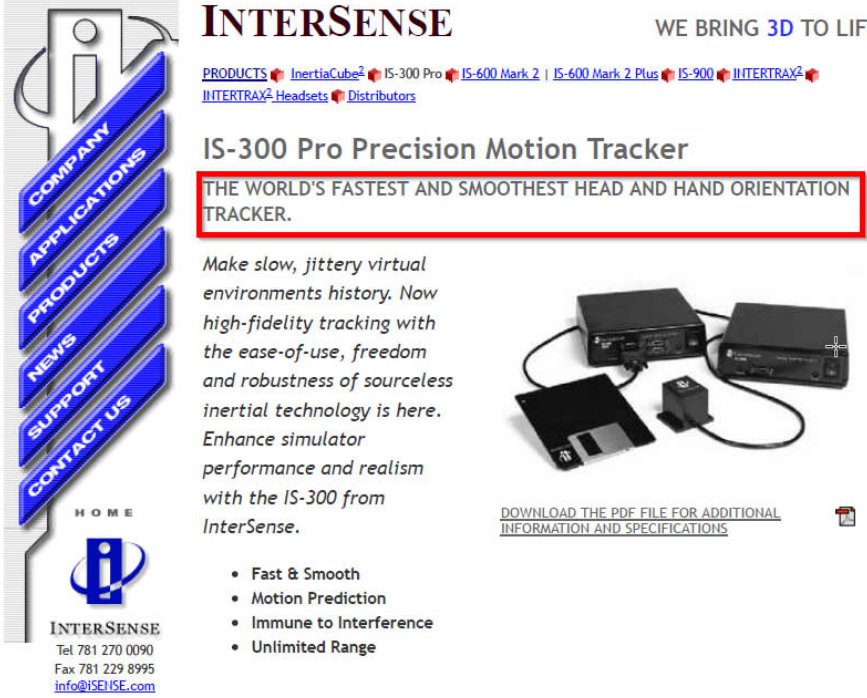

CLAIM 1	InterSense IS-300
<p>[1.b] using a position tracker to track a position of a first localized feature associated with a limb of the user relative to the user's head.</p>	<p><i>See also</i> Defendants' Invalidity Contentions for further discussion.</p> <p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, using a position tracker to track a position of a first localized feature associated with a limb of the user relative to the user's head. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <p>12/8/21, 4:14 PM IS-300 Pro Precision Motion Tracker The Wayback Machine - https://web.archive.org/web/20021017040949/http://intersense.com:80/products/prec/is...</p>  <p>InterSense IS-300 Ex. 1.</p>

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InterSense IS-300



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- Immune to Interference
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 INTERSENSE

InterSense IS-300 Ex. 2.

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CLAIM 1	InterSense IS-300																											
	<div><h2>2 Specifications and Performance Characteristics</h2><p>Performance Specifications</p><table><tr><td>Degrees of Freedom</td><td>Yaw, pitch, and roll</td></tr><tr><td>Angular Range</td><td>All orientations</td></tr><tr><td>Maximum Angular Rate:</td><td>1200°/sec</td></tr><tr><td>Angular Resolution:</td><td>0.02° RMS</td></tr><tr><td>Angular Accuracy:</td><td>1.0° RMS</td></tr><tr><td>Dynamic Accuracy:</td><td>3.0° RMS</td></tr><tr><td>Update Rate:</td><td>up to 500Hz</td></tr></table><table><tr><td></td><td>IS-300</td><td>IS-300 Pro</td></tr><tr><td>Prediction:</td><td>NA</td><td>0-50ms</td></tr><tr><td>Number of InertiaCube Sensors:</td><td>1</td><td>up to 4</td></tr></table><table><tr><td>Interface:</td><td>RS-232C with selectable baud rates to 115, 200</td></tr><tr><td>Protocol:</td><td>Compatible with industry-standard protocol (FASTRAK™)</td></tr></table><p>InterSense IS-300 Ex. 3 at 10.</p></div>	Degrees of Freedom	Yaw, pitch, and roll	Angular Range	All orientations	Maximum Angular Rate:	1200°/sec	Angular Resolution:	0.02° RMS	Angular Accuracy:	1.0° RMS	Dynamic Accuracy:	3.0° RMS	Update Rate:	up to 500Hz		IS-300	IS-300 Pro	Prediction:	NA	0-50ms	Number of InertiaCube Sensors:	1	up to 4	Interface:	RS-232C with selectable baud rates to 115, 200	Protocol:	Compatible with industry-standard protocol (FASTRAK™)
Degrees of Freedom	Yaw, pitch, and roll																											
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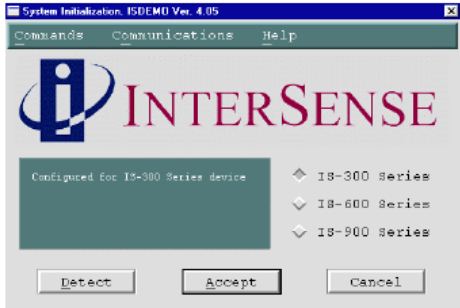
CLAIM 1	InterSense IS-300						
	<p data-bbox="531 245 867 329">3 Setting up your new IS-300</p> <p data-bbox="531 391 795 412">3.1 IS-300 Components</p> <div data-bbox="516 448 1274 963">  <p data-bbox="531 496 621 513">IS-300 Pro</p> <p data-bbox="1192 456 1247 472">IS-300</p> <p data-bbox="520 922 705 963">ISDEMO Configuration Software</p> <p data-bbox="1182 930 1274 946">InertiaCube</p> </div> <p data-bbox="531 1092 674 1109">IS-300 Base Unit</p> <p data-bbox="783 1092 1274 1133">The base unit is the processing engine of the IS-300 system. It has the following connections:</p> <table border="1" data-bbox="768 1146 1281 1243"> <tr> <td data-bbox="783 1162 953 1179">InertiaCubes (up to 4)</td><td data-bbox="972 1162 1266 1179">via cable attached to the InertiaCubes</td></tr> <tr> <td data-bbox="783 1187 835 1203">Power</td><td data-bbox="972 1187 1178 1203">via 12V DC power supply.</td></tr> <tr> <td data-bbox="783 1211 915 1227">User's Computer</td><td data-bbox="972 1211 1194 1227">via null modem RS232 cable</td></tr> </table> <p data-bbox="783 1252 1266 1268">The base unit should be installed in a clean, dry environment.</p> <p data-bbox="501 1325 884 1352">InterSense IS-300 Ex. 3 at 12.</p>	InertiaCubes (up to 4)	via cable attached to the InertiaCubes	Power	via 12V DC power supply.	User's Computer	via null modem RS232 cable
InertiaCubes (up to 4)	via cable attached to the InertiaCubes						
Power	via 12V DC power supply.						
User's Computer	via null modem RS232 cable						

Exhibit A-15

CLAIM 1	InterSense IS-300
	 <p><u>IS-300</u> The IS-300 is a 3-Degree Of Freedom (DOF) tracker. It obtains its primary motion sensing data using a miniature solid-state inertial measurement unit (InertiaCube) which senses angular rate of rotation, gravity and earth components along three perpendicular axes. The angular rates are integrated to obtain the orientation (yaw, pitch, and roll) of the sensor. Gravitometer and compass measurements are used to prevent the accumulation of gyroscopic drift.</p> <p>InterSense IS-300 Ex. 3 at 17.</p> <p><i>See also</i> Defendants' Invalidity Contentions for further discussion.</p>

B. DEPENDENT CLAIM 2

CLAIM 2	InterSense IS-300
<p>[2] The method of claim 1 in which the first localized feature associated with the limb comprises a point on a hand-held object or a point on a hand-mounted</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 1 in which the first localized feature associated with the limb comprises a point on a hand-held object or a point on a hand-mounted object or a point on a hand. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

Exhibit A-15

CLAIM 2	InterSense IS-300
object or a point on a hand.	

C. DEPENDENT CLAIM 4

CLAIM 4	InterSense IS-300
[4] The method of claim 2, wherein the first localized feature is on a ring.	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 2, wherein the first localized feature is on a ring. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 2, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

D. DEPENDENT CLAIM 5

CLAIM 5	InterSense IS-300
[5] The method of claim 1 further comprising using the position tracker to determine a distance between the first localized feature and a second localized feature associated with the user's head.	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 1 further comprising using the position tracker to determine a distance between the first localized feature and a second localized feature associated with the user's head. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

Exhibit A-15

E. DEPENDENT CLAIM 7

CLAIM 7	InterSense IS-300
[7] The method of claim 1 in which the position tracker comprises an electro-optical system that tracks LEDs, optical sensors or reflective marks.	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 1 in which the position tracker comprises an electro-optical system that tracks LEDs, optical sensors or reflective marks. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

F. DEPENDENT CLAIM 8

CLAIM 8	InterSense IS-300
[8] The method of claim 1 in which the position tracker comprises a video machine-vision device that recognizes the first localized feature.	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 1 in which the position tracker comprises a video machine-vision device that recognizes the first localized feature. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

G. DEPENDENT CLAIM 11

CLAIM 11	InterSense IS-300
[11] The method of claim 1 in which the sourceless orientation	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 1 in which the sourceless orientation tracker comprises an inertial sensor. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p>

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CLAIM 11	InterSense IS-300
<p>tracker comprises an inertial sensor.</p>	<p><i>See, e.g.:</i></p> <p>12/8/21, 4:14 PM IS-300 Pro Precision Motion Tracker The Wayback Machine - https://web.archive.org/web/20021017040949/http://intersense.com:80/products/prec/is...</p>  <p>INTERSENSE WE BRING 3D TO LIFE</p> <p>PRODUCTS InertiaCube² IS-300 Pro IS-600 Mark 2 IS-600 Mark 2 Plus IS-900 INTERTRAX² INTERTRAX² Headsets Distributors</p> <p>IS-300 Pro Precision Motion Tracker</p> <p>THE WORLD'S FASTEST AND SMOOTHEST HEAD AND HAND ORIENTATION TRACKER.</p> <p><i>Make slow, jittery virtual environments history. Now high-fidelity tracking with the ease-of-use, freedom and robustness of sourceless inertial technology is here. Enhance simulator performance and realism with the IS-300 from InterSense.</i></p> <ul style="list-style-type: none"> • Fast & Smooth • Motion Prediction • Immune to Interference • Unlimited Range <p>InterSense IS-300 Ex. 1.</p>

Exhibit A-15

CLAIM 11

InterSense IS-300



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- Motion Prediction
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InterSense IS-300 Ex. 2.

Exhibit A-15

CLAIM 11	InterSense IS-300
	<p>1 Theory of Operations</p> <p>Congratulations for buying the finest orientation tracker on the market! This technology offers you several advantages:</p> <ul style="list-style-type: none"> • Very low latency • Unlimited range • Prediction based on directly sensed motion derivatives • Smooth, jitter-free tracking <p>The IS-300 is an inertial 3-DOF (Degree of Freedom) orientation tracking system. It obtains its primary motion sensing using a miniature solid-state inertial measurement unit (called an InertiaCube™) which senses angular rate of rotation, gravity and earth magnetic field along three perpendicular axes. The angular rates are integrated to obtain the orientation (yaw, pitch, and roll) of the sensor. Gravitometer and compass measurements are used to prevent the accumulation of gyroscopic drift.</p> <p>1.1 InertiaCube™ integrated inertial instrument</p> <p>The InertiaCube is a monolithic part based on micro-electro-mechanical systems (MEMS) technology involving no spinning wheels that might generate noise, inertial forces and mechanical failures. The InertiaCube simultaneously measures 9 physical properties, namely angular rates, linear accelerations, and magnetic field components along all 3 axes. Micro-miniature vibrating elements are employed to measure all the angular rate components and linear accelerations, with integral electronics and solid-state magnetometers. The magnetometers are included for optional yaw drift correction in the sourceless inertial orientation mode only. The geometry and composition of these elements are proprietary, but the functional performance of the multisensor unit can be understood sufficiently by reference to the equivalent diagram in Figure 1.</p> <p>Intersense IS-300 Ex. 3 at p.6.</p>

Exhibit A-15

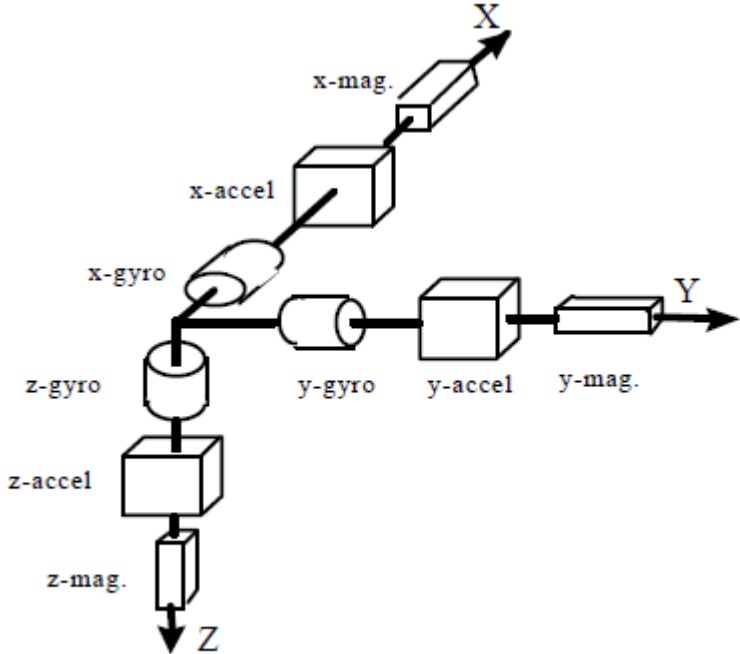
CLAIM 11	InterSense IS-300
	 <p>Figure 1: Functional diagram of InertiaCube</p> <p>Intersense IS-300 Ex. 3 at Fig. 1.</p>

Exhibit A-15

CLAIM 11	InterSense IS-300																											
	<div>2 Specifications and Performance Characteristics</div> <div>Performance Specifications</div> <table><tr><td>Degrees of Freedom</td><td>Yaw, pitch, and roll</td></tr><tr><td>Angular Range</td><td>All orientations</td></tr><tr><td>Maximum Angular Rate:</td><td>1200°/sec</td></tr><tr><td>Angular Resolution:</td><td>0.02° RMS</td></tr><tr><td>Angular Accuracy:</td><td>1.0° RMS</td></tr><tr><td>Dynamic Accuracy:</td><td>3.0° RMS</td></tr><tr><td>Update Rate:</td><td>up to 500Hz</td></tr></table> <table><tr><td></td><td>IS-300</td><td>IS-300 Pro</td></tr><tr><td>Prediction:</td><td>NA</td><td>0-50ms</td></tr><tr><td>Number of InertiaCube Sensors:</td><td>1</td><td>up to 4</td></tr></table> <table><tr><td>Interface:</td><td>RS-232C with selectable baud rates to 115, 200</td></tr><tr><td>Protocol:</td><td>Compatible with industry-standard protocol (FASTRAK™)</td></tr></table> <div>InterSense IS-300 Ex. 3 at 10.</div>	Degrees of Freedom	Yaw, pitch, and roll	Angular Range	All orientations	Maximum Angular Rate:	1200°/sec	Angular Resolution:	0.02° RMS	Angular Accuracy:	1.0° RMS	Dynamic Accuracy:	3.0° RMS	Update Rate:	up to 500Hz		IS-300	IS-300 Pro	Prediction:	NA	0-50ms	Number of InertiaCube Sensors:	1	up to 4	Interface:	RS-232C with selectable baud rates to 115, 200	Protocol:	Compatible with industry-standard protocol (FASTRAK™)
Degrees of Freedom	Yaw, pitch, and roll																											
Angular Range	All orientations																											
Maximum Angular Rate:	1200°/sec																											
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Prediction:	NA	0-50ms																										
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Exhibit A-15


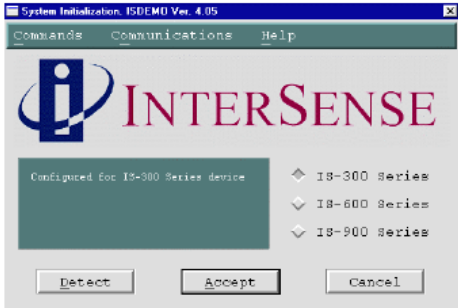
CLAIM 11	InterSense IS-300						
	<p data-bbox="541 240 882 332">3 Setting up your new IS-300</p> <p data-bbox="541 386 812 414">3.1 IS-300 Components</p> <div data-bbox="525 446 1291 966">  <p data-bbox="541 495 640 516">IS-300 Pro</p> <p data-bbox="1207 451 1264 472">IS-300</p> <p data-bbox="531 917 722 961">ISDEMO Configuration Software</p> <p data-bbox="1192 922 1291 943">InertiaCube</p> </div> <p data-bbox="541 1088 688 1109">IS-300 Base Unit</p> <p data-bbox="793 1088 1285 1133">The base unit is the processing engine of the IS-300 system. It has the following connections:</p> <table border="1" data-bbox="793 1144 1285 1242"> <tr> <td>InertiaCubes (up to 4)</td> <td>via cable attached to the InertiaCubes</td> </tr> <tr> <td>Power</td> <td>via 12V DC power supply.</td> </tr> <tr> <td>User's Computer</td> <td>via null modem RS232 cable</td> </tr> </table> <p data-bbox="793 1247 1276 1269">The base unit should be installed in a clean, dry environment.</p> <p data-bbox="514 1318 898 1351">InterSense IS-300 Ex. 3 at 12.</p>	InertiaCubes (up to 4)	via cable attached to the InertiaCubes	Power	via 12V DC power supply.	User's Computer	via null modem RS232 cable
InertiaCubes (up to 4)	via cable attached to the InertiaCubes						
Power	via 12V DC power supply.						
User's Computer	via null modem RS232 cable						

Exhibit A-15

CLAIM 11	InterSense IS-300
	 <p><u>IS-300</u> The IS-300 is a 3-Degree Of Freedom (DOF) tracker. It obtains its primary motion sensing data using a miniature solid-state inertial measurement unit (InertiaCube) which senses angular rate of rotation, gravity and earth components along three perpendicular axes. The angular rates are integrated to obtain the orientation (yaw, pitch, and roll) of the sensor. Gravitometer and compass measurements are used to prevent the accumulation of gyroscopic drift.</p> <p>InterSense IS-300 Ex. 3 at 17.</p> <p><i>See Disclosures with respect to Claim 1, supra; see also Defendants' Invalidity Contentions for further discussion.</i></p>

H. DEPENDENT CLAIM 12

CLAIM 12	InterSense IS-300
<p>[12] The method of claim 1 in which the sourceless orientation tracker comprises a tilt-sensor.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 1 in which the sourceless orientation tracker comprises a tilt-sensor. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

Exhibit A-15

CLAIM 12	InterSense IS-300
	<p>12/8/21, 4:14 PM IS-300 Pro Precision Motion Tracker</p> <p>The Wayback Machine - https://web.archive.org/web/20021017040949/http://intersense.com:80/products/prec/is...</p> <div style="display: flex; justify-content: space-between;"> <div data-bbox="520 289 697 987" style="width: 25%;">  <p>COMPANY</p> <p>APPLICATIONS</p> <p>PRODUCTS</p> <p>NEWS</p> <p>SUPPORT</p> <p>CONTACT US</p> <p>HOME</p> <p>INTERSENSE Tel 781 270 0090 Fax 781 229 8995 info@intersense.com</p> </div> <div data-bbox="718 289 1402 987" style="width: 75%;"> <h2 style="margin: 0;">INTERSENSE</h2> <p style="text-align: right; margin: 0;">WE BRING 3D TO LIFE</p> <p style="margin: 5px 0;">PRODUCTS InertiaCube2 IS-300 Pro IS-600 Mark 2 IS-600 Mark 2 Plus IS-900 INTERTRAX2 INTERTRAX2 Headsets Distributors</p> <h3 style="margin: 10px 0;">IS-300 Pro Precision Motion Tracker</h3> <div style="border: 2px solid red; padding: 5px; margin: 5px 0;"> <p>THE WORLD'S FASTEST AND SMOOTHEST HEAD AND HAND ORIENTATION TRACKER.</p> </div> <p style="margin: 10px 0;"><i>Make slow, jittery virtual environments history. Now high-fidelity tracking with the ease-of-use, freedom and robustness of sourceless inertial technology is here. Enhance simulator performance and realism with the IS-300 from InterSense.</i></p> <div style="display: flex; align-items: center; justify-content: center;">  </div> <p style="margin: 10px 0;">DOWNLOAD THE PDF FILE FOR ADDITIONAL INFORMATION AND SPECIFICATIONS </p> <ul style="list-style-type: none"> Fast & Smooth Motion Prediction Immune to Interference Unlimited Range </div> </div>

Exhibit A-15

CLAIM 12

InterSense IS-300



- Fast & Smooth
- Motion Prediction
- Immune to Interference
- Unlimited Range

IS-300 Precision Motion Tracker

The world's fastest and smoothest head and hand orientation tracker.

Slow, jittery virtual environments are now a thing of the past. For the first time, high-fidelity tracking with all the ease-of-use, freedom and robustness inherent in sourceless inertial technology is now possible. Simulator performance and realism are greatly enhanced with the IS-300 from InterSense.

Jitter-Free.

The InterSense IS-300 tracker virtually eliminates the jitter common to other systems. This has been a major deficiency and source of simulator sickness in immersive head-mounted display applications.

Fast Response.

The InterSense IS-300 PRO offers industry leading update rates of up to 500 Hz, for the world's lowest latency tracking. Tracker-induced lag is removed from your virtual environment.

Distortion-Free.

Our patented inertial sensing technology is not susceptible to the electromagnetic interference you've come to expect from

competitive tracking technologies. So the InterSense IS-300 offers smooth, steady response, even in noisy, metal-cluttered environments.

Unlimited Range.

The IS-300 is completely sourceless. This means no setup, no line-of-sight constraints and virtually unlimited operating range. The signal processor is small enough to wear on a belt for tetherless application.

Motion Prediction.

The IS-300 PRO can predict motion up to 50 ms in the future, which compensates for graphics rendering delays and further contributes to eliminating simulator lag. InterSense is

the only company to employ the proven benefits of inertial angular rate and acceleration sensors to provide accurate feed-forward motion prediction.

No Slop or Drift.

InterSense's proprietary micro-machined inertial sensor unit and signal processing virtually eliminates the sloshy response common to inclinometers and the accumulation of drift error that plagues ordinary gyroscopes.

Software Compatibility.

If your application uses software that supports industry-standard trackers, you won't have to change a line of code to use the IS-300!



InterSense IS-300 Ex. 2.

Exhibit A-15

CLAIM 12	InterSense IS-300									
	<div><div>2</div><div>Specifications and Performance Characteristics</div></div> <div><div>Performance Specifications</div><div><div>Degrees of Freedom</div><div>Yaw, pitch, and roll</div></div><div><div>Angular Range</div><div>All orientations</div></div><div><div>Maximum Angular Rate:</div><div>1200°/sec</div></div><div><div>Angular Resolution:</div><div>0.02° RMS</div></div><div><div>Angular Accuracy:</div><div>1.0° RMS</div></div><div><div>Dynamic Accuracy:</div><div>3.0° RMS</div></div><div><div>Update Rate:</div><div>up to 500Hz</div></div></div> <div><table><tr><td></td><td>IS-300</td><td>IS-300 Pro</td></tr><tr><td>Prediction:</td><td>NA</td><td>0-50ms</td></tr><tr><td>Number of InertiaCube Sensors:</td><td>1</td><td>up to 4</td></tr></table><div><div>Interface:</div><div>RS-232C with selectable baud rates to 115, 200</div></div><div><div>Protocol:</div><div>Compatible with industry-standard protocol (FASTRAK™)</div></div></div> <div>InterSense IS-300 Ex. 3 at 10.</div>		IS-300	IS-300 Pro	Prediction:	NA	0-50ms	Number of InertiaCube Sensors:	1	up to 4
	IS-300	IS-300 Pro								
Prediction:	NA	0-50ms								
Number of InertiaCube Sensors:	1	up to 4								

Exhibit A-15


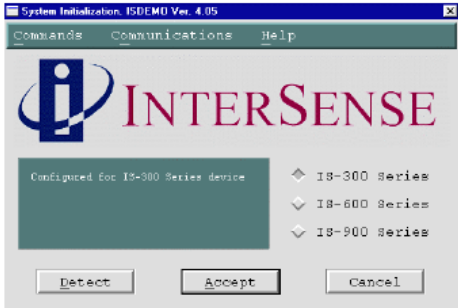
CLAIM 12	InterSense IS-300						
	<p data-bbox="541 245 884 329">3 Setting up your new IS-300</p> <p data-bbox="541 391 810 412">3.1 IS-300 Components</p>  <p data-bbox="541 1089 688 1110">IS-300 Base Unit</p> <p data-bbox="793 1089 1289 1136">The base unit is the processing engine of the IS-300 system. It has the following connections:</p> <table border="1" data-bbox="793 1144 1289 1242"> <tr> <td>InertiaCubes (up to 4)</td> <td>via cable attached to the InertiaCubes</td> </tr> <tr> <td>Power</td> <td>via 12V DC power supply.</td> </tr> <tr> <td>User's Computer</td> <td>via null modem RS232 cable</td> </tr> </table> <p data-bbox="793 1250 1289 1271">The base unit should be installed in a clean, dry environment.</p> <p data-bbox="514 1323 898 1354">InterSense IS-300 Ex. 3 at 12.</p>	InertiaCubes (up to 4)	via cable attached to the InertiaCubes	Power	via 12V DC power supply.	User's Computer	via null modem RS232 cable
InertiaCubes (up to 4)	via cable attached to the InertiaCubes						
Power	via 12V DC power supply.						
User's Computer	via null modem RS232 cable						

Exhibit A-15

CLAIM 12	InterSense IS-300
	 <p><u>IS-300</u> The IS-300 is a 3-Degree Of Freedom (DOF) tracker. It obtains its primary motion sensing data using a miniature solid-state inertial measurement unit (InertiaCube) which senses angular rate of rotation, gravity and earth components along three perpendicular axes. The angular rates are integrated to obtain the orientation (yaw, pitch, and roll) of the sensor. Gravitometer and compass measurements are used to prevent the accumulation of gyroscopic drift.</p> <p>InterSense IS-300 Ex. 3 at 17.</p> <p>See Disclosures with respect to Claim 1, <i>supra</i>; see also Defendants' Invalidity Contentions for further discussion.</p>

I. DEPENDENT CLAIM 14

CLAIM 14	InterSense IS-300
<p>[14] The method of claim 1 further comprising:</p> <p>mounting a display device on the user's head; and</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 1 further comprising mounting a display device on the user's head, and displaying a first object at a first position on the display device. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p>See Disclosures with respect to Claim 1, <i>supra</i>; see also Defendants' Invalidity Contentions for further discussion.</p>

Exhibit A-15

CLAIM 14	InterSense IS-300
displaying a first object at a first position on the display device.	

J. DEPENDENT CLAIM 15

CLAIM 15	InterSense IS-300
<p>[15] The method of claim 14 further comprising:</p> <p>changing the orientation of the display device; and</p> <p>after changing the orientation of the display device, redisplaying the first object at a second position on the display device based on the change in orientation.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 14 further comprising changing the orientation of the display device, and after changing the orientation of the display device, redisplaying the first object at a second position on the display device based on the change in orientation. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

K. DEPENDENT CLAIM 16

CLAIM 16	InterSense IS-300
[16] The method of claim 15, wherein the	At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 15, wherein the second position is determined so as to make the position of the first object

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CLAIM 16	InterSense IS-300
<p>second position is determined so as to make the position of the first object appear to be fixed relative to a first coordinate reference frame, which frame does not rotate with the display device during said changing of the orientation of the display device.</p>	<p>appear to be fixed relative to a first coordinate reference frame, which frame does not rotate with the display device during said changing of the orientation of the display device. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 15, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

L. DEPENDENT CLAIM 17

CLAIM 17	InterSense IS-300
<p>[17] The method of claim 16, wherein the first object is displayed in response to a signal from a computer.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 16, wherein the first object is displayed in response to a signal from a computer. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 17, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

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M. DEPENDENT CLAIM 18

CLAIM 18	InterSense IS-300
<p>[18] The method of claim 17, further comprising:</p> <p>mounting a wearable computer on the user's body, and wherein the first object is displayed in response to a signal from the wearable computer.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 17, further comprising mounting a wearable computer on the user's body, and wherein the first object is displayed in response to a signal from the wearable computer. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 17, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

N. DEPENDENT CLAIM 19

CLAIM 19	InterSense IS-300
<p>[19] The method of claim 15, further comprising displaying a portion of a virtual environment on the display device.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 15, further comprising displaying a portion of a virtual environment on the display device. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 15, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

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O. DEPENDENT CLAIM 20

CLAIM 20	InterSense IS-300
<p>[20] The method of claim 19, further comprising:</p> <p>displaying a portion of the virtual environment on the display device before changing the orientation of the display device, and displaying a different portion of the virtual environment on the display device after changing the orientation of the display device.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 19, further comprising displaying a portion of the virtual environment on the display device before changing the orientation of the display device, and displaying a different portion of the virtual environment on the display device after changing the orientation of the display device. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 20, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

P. DEPENDENT CLAIM 23

CLAIM 23	InterSense IS-300
<p>[23] The method of claim 15, further comprising displaying a graphical user interface for a computer on the display device.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 15, further comprising displaying a graphical user interface for a computer on the display device. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 15, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

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Q. DEPENDENT CLAIM 24

CLAIM 24	InterSense IS-300
[24] The method of claim 23, wherein the first object is a window, icon or menu in the graphical user interface.	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 23, wherein the first object is a window, icon or menu in the graphical user interface. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See Disclosures with respect to Claim 23, supra; see also Defendants' Invalidity Contentions for further discussion.</i></p>

R. DEPENDENT CLAIM 25

CLAIM 25	InterSense IS-300
[25] The method of claim 23, wherein the first object is a pointer for the graphical user interface.	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 23, wherein the first object is a pointer for the graphical user interface. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See Disclosures with respect to Claim 23, supra; see also Defendants' Invalidity Contentions for further discussion.</i></p>

S. DEPENDENT CLAIM 26

CLAIM 26	InterSense IS-300
[26] The method of claim 16, further comprising: changing the position of the first localized feature	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 16, further comprising changing the position of the first localized feature relative to the position tracker, and after changing the position of the first localized feature, redisplaying the first object at a second position on the display device determined based on the change in the position of the first localized feature. In the alternative,</p>

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CLAIM 26	InterSense IS-300
<p>relative to the position tracker; and</p> <p>after changing the position of the first localized feature, redisplaying the first object at a second position on the display device determined based on the change in the position of the first localized feature.</p>	<p>this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See Disclosures with respect to Claim 16, supra; see also Defendants' Invalidity Contentions for further discussion.</i></p>

T. DEPENDENT CLAIM 27

CLAIM 27	InterSense IS-300
<p>[27] The method of claim 26, further comprising:</p> <p>displaying a second object on the display device, wherein</p> <p>after changing the position of the first localized feature, the displayed position of the second object on the display device does not</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 26 further comprising displaying a second object on the display device, wherein after changing the position of the first localized feature, the displayed position of the second object on the display device does not change in response to the change in the position of the first localized feature. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See Disclosures with respect to Claim 16, supra; see also Defendants' Invalidity Contentions for further discussion.</i></p>

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CLAIM 27	InterSense IS-300
change in response to the change in the position of the first localized feature.	

U. DEPENDENT CLAIM 28

CLAIM 28	InterSense IS-300
[28] The method of claim 26, wherein the second position is determined so as to make the position of the first object appear to coincide with the position of the first localized feature as seen or felt by the user.	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 26, wherein the second position is determined so as to make the position of the first object appear to coincide with the position of the first localized feature as seen or felt by the user. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See Disclosures with respect to Claim 26, supra; see also Defendants' Invalidity Contentions for further discussion.</i></p>

V. DEPENDENT CLAIM 29

CLAIM 29	InterSense IS-300
<p>[29] The method of claim 17, further comprising:</p> <p>changing the orientation of the first coordinate reference frame in response to a signal</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 17, further comprising changing the orientation of the first coordinate reference frame in response to a signal being received by the computer. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See Disclosures with respect to Claim 17, supra; see also Defendants' Invalidity Contentions for further discussion.</i></p>

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CLAIM 29	InterSense IS-300
being received by the computer.	

W. DEPENDENT CLAIM 30

CLAIM 30	InterSense IS-300
[30] The method of claim 29, wherein the orientation of the first coordinate reference frame is changed in response to a change in the position of the first localized feature.	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 29, wherein the orientation of the first coordinate reference frame is changed in response to a change in the position of the first localized feature. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 29, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

X. DEPENDENT CLAIM 31

CLAIM 31	InterSense IS-300
[31] The method of claim 29, wherein the orientation of the first coordinate reference frame is changed in response to a signal representative of the location of the user.	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 29, wherein the orientation of the first coordinate reference frame is changed in response to a signal representative of the location of the user. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 29, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

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Y. DEPENDENT CLAIM 32

CLAIM 32	InterSense IS-300
<p>[32] The method of claim 29, wherein the orientation of the first coordinate reference frame is changed in response to a signal representative of a destination.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 29, wherein the orientation of the first coordinate reference frame is changed in response to a signal representative of a destination. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 29, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

Z. DEPENDENT CLAIM 33

CLAIM 33	InterSense IS-300
<p>[33] The method of claim 29, wherein the orientation of the first coordinate reference frame is changed in response to a signal representative of a change in the user's immediate surroundings.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, method of claim 29, wherein the orientation of the first coordinate reference frame is changed in response to a signal representative of a change in the user's immediate surroundings. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 29, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

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AA. DEPENDENT CLAIM 35

CLAIM 35	InterSense IS-300
<p>[35] The method of claim 27, wherein redisplaying the first object further comprises changing the apparent size of the first object according to the change in position of the first localized feature.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 27, wherein redisplaying the first object further comprises changing the apparent size of the first object according to the change in position of the first localized feature. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 35, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

BB. DEPENDENT CLAIM 41

CLAIM 41	InterSense IS-300
<p>[41] The method of claim 16, further comprising:</p> <p>displaying the first object at a third position;</p> <p>after displaying the first object at the third position, changing the orientation of the display; and</p> <p>after changing the orientation of the display, continuing to</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 16, further comprising displaying the first object at a third position, after displaying the first object at the third position, changing the orientation of the display, and after changing the orientation of the display, continuing to display the first object at the third position. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 16, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

Exhibit A-15

CLAIM 41	InterSense IS-300
display the first object at the third position.	

CC. DEPENDENT CLAIM 45

CLAIM 45	InterSense IS-300
<p>[45] The method of claim 1, further comprising:</p> <p>positioning the first localized feature at a first point;</p> <p>positioning the first localized feature at a second point; and</p> <p>calculating the distance between the first point and the second point.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 1, further comprising positioning the first localized feature at a first point, positioning the first localized feature at a second point, and calculating the distance between the first point and the second point. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

Exhibit A-15

DD. DEPENDENT CLAIM 46

CLAIM 46	InterSense IS-300
<p>[46] The method of claim 1, further comprising:</p> <p>determining a position vector of the first localized feature relative to a second localized feature associated with the user's head; and</p> <p>transforming the position vector based on an orientation of the user's head.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 1, further comprising determining a position vector of the first localized feature relative to a second localized feature associated with the user's head, and transforming the position vector based on an orientation of the user's head. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

EE. DEPENDENT CLAIM 47

CLAIM 47	InterSense IS-300
<p>[47] The method of claim 46, further comprising:</p> <p>setting an assumed position for the user's head in a coordinate system; and</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 46, further comprising setting an assumed position for the user's head in a coordinate system, and setting a position for the first localized feature in the coordinate system based on the assumed position of the user's head and said position vector. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 46, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

Exhibit A-15

CLAIM 47	InterSense IS-300
<p>setting a position for the first localized feature in the coordinate system based on the assumed position of the user's head and said position vector.</p>	

FF.DEPENDENT CLAIM 48

CLAIM 48	InterSense IS-300
<p>[48] The method of claim 47, where setting a position for the first localized feature further comprises:</p> <p>measuring the orientation of the user's head relative to a fixed frame of reference.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 47, where setting a position for the first localized feature further comprises measuring the orientation of the user's head relative to a fixed frame of reference. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 47, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>

GG. DEPENDENT CLAIM 50

CLAIM 50	InterSense IS-300
<p>[50] The method of claim 1, wherein the sourceless orientation</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 1, wherein the sourceless orientation tracker comprises a first inertial sensor, and further comprising mounting a second inertial sensor elsewhere on the user's body or in an object held by the user, and</p>

Exhibit A-15

CLAIM 50	InterSense IS-300
<p>tracker comprises a first inertial sensor, and further comprising:</p> <p>mounting a second inertial sensor elsewhere on the user's body or in an object held by the user; and</p> <p>tracking the position of one inertial sensor relative to the other.</p>	<p>tracking the position of one inertial sensor relative to the other. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <div data-bbox="510 448 1417 1195"> <p>12/8/21, 4:14 PM IS-300 Pro Precision Motion Tracker</p> <p>The Wayback Machine - https://web.archive.org/web/20021017040949/http://intersense.com:80/products/prec/is...</p>  <p>INTERSENSE WE BRING 3D TO LIFE</p> <p>PRODUCTS InertiaCube² IS-300 Pro IS-600 Mark 2 IS-600 Mark 2 Plus IS-900 INTERTRAX²</p> <p>INTERTRAX² Headsets Distributors</p> <h3>IS-300 Pro Precision Motion Tracker</h3> <p>THE WORLD'S FASTEST AND SMOOTHEST HEAD AND HAND ORIENTATION TRACKER.</p> <p><i>Make slow, jittery virtual environments history. Now high-fidelity tracking with the ease-of-use, freedom and robustness of sourceless inertial technology is here. Enhance simulator performance and realism with the IS-300 from InterSense.</i></p> <ul style="list-style-type: none"> • Fast & Smooth • Motion Prediction • Immune to Interference • Unlimited Range <p>DOWNLOAD THE PDF FILE FOR ADDITIONAL INFORMATION AND SPECIFICATIONS</p> </div> <p>InterSense IS-300 Ex. 1.</p>

Exhibit A-15

CLAIM 50

InterSense IS-300



- Fast & Smooth
- Motion Prediction
- Immune to Interference
- Unlimited Range

IS-300 Precision Motion Tracker

The world's fastest and smoothest head and hand orientation tracker.

Slow, jittery virtual environments are now a thing of the past. For the first time, high-fidelity tracking with all the ease-of-use, freedom and robustness inherent in sourceless inertial technology is now possible. Simulator performance and realism are greatly enhanced with the IS-300 from InterSense.

Jitter-Free.

The InterSense IS-300 tracker virtually eliminates the jitter common to other systems. This has been a major deficiency and source of simulator sickness in immersive head-mounted display applications.

Fast Response.

The InterSense IS-300 PRO offers industry leading update rates of up to 500 Hz, for the world's lowest latency tracking. Tracker-induced lag is removed from your virtual environment.

Distortion-Free.

Our patented inertial sensing technology is not susceptible to the electromagnetic interference you've come to expect from

competitive tracking technologies. So the InterSense IS-300 offers smooth, steady response, even in noisy, metal-cluttered environments.

Unlimited Range.

The IS-300 is completely sourceless. This means no setup, no line-of-sight constraints and virtually unlimited operating range. The signal processor is small enough to wear on a belt for tetherless application.

Motion Prediction.

The IS-300 PRO can predict motion up to 50 ms in the future, which compensates for graphics rendering delays and further contributes to eliminating simulator lag. InterSense is

the only company to employ the proven benefits of inertial angular rate and acceleration sensors to provide accurate feed-forward motion prediction.

No Slop or Drift.

InterSense's proprietary micro-machined inertial sensor unit and signal processing virtually eliminates the sloshy response common to inclinometers and the accumulation of drift error that plagues ordinary gyroscopes.

Software Compatibility.

If your application uses software that supports industry-standard trackers, you won't have to change a line of code to use the IS-300!



InterSense IS-300 Ex. 2.

Exhibit A-15

CLAIM 50	InterSense IS-300																																					
	<div>2 Specifications and Performance Characteristics</div> <div>Performance Specifications</div> <table><tr><td>Degrees of Freedom</td><td colspan="2">Yaw, pitch, and roll</td></tr><tr><td>Angular Range</td><td colspan="2">All orientations</td></tr><tr><td>Maximum Angular Rate:</td><td colspan="2">1200°/sec</td></tr><tr><td>Angular Resolution:</td><td colspan="2">0.02° RMS</td></tr><tr><td>Angular Accuracy:</td><td colspan="2">1.0° RMS</td></tr><tr><td>Dynamic Accuracy:</td><td colspan="2">3.0° RMS</td></tr><tr><td>Update Rate:</td><td colspan="2">up to 500Hz</td></tr></table> <table><tr><td></td><td>IS-300</td><td>IS-300 Pro</td></tr><tr><td>Prediction:</td><td>NA</td><td>0-50ms</td></tr><tr><td>Number of InertiaCube Sensors:</td><td>1</td><td>up to 4</td></tr></table> <table><tr><td>Interface:</td><td colspan="2">RS-232C with selectable baud rates to 115, 200</td></tr><tr><td>Protocol:</td><td colspan="2">Compatible with industry-standard protocol (FASTRAK™)</td></tr></table> <div>InterSense IS-300 Ex. 3 at 10.</div>		Degrees of Freedom	Yaw, pitch, and roll		Angular Range	All orientations		Maximum Angular Rate:	1200°/sec		Angular Resolution:	0.02° RMS		Angular Accuracy:	1.0° RMS		Dynamic Accuracy:	3.0° RMS		Update Rate:	up to 500Hz			IS-300	IS-300 Pro	Prediction:	NA	0-50ms	Number of InertiaCube Sensors:	1	up to 4	Interface:	RS-232C with selectable baud rates to 115, 200		Protocol:	Compatible with industry-standard protocol (FASTRAK™)	
Degrees of Freedom	Yaw, pitch, and roll																																					
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Prediction:	NA	0-50ms																																				
Number of InertiaCube Sensors:	1	up to 4																																				
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Protocol:	Compatible with industry-standard protocol (FASTRAK™)																																					

Exhibit A-15


CLAIM 50	InterSense IS-300						
	<p data-bbox="541 245 884 329">3 Setting up your new IS-300</p> <p data-bbox="541 388 810 412">3.1 IS-300 Components</p>  <p data-bbox="541 1089 688 1110">IS-300 Base Unit</p> <p data-bbox="793 1089 1289 1133">The base unit is the processing engine of the IS-300 system. It has the following connections:</p> <table border="1" data-bbox="793 1146 1289 1243"> <tr> <td>InertiaCubes (up to 4)</td> <td>via cable attached to the InertiaCubes</td> </tr> <tr> <td>Power</td> <td>via 12V DC power supply.</td> </tr> <tr> <td>User's Computer</td> <td>via null modem RS232 cable</td> </tr> </table> <p data-bbox="793 1252 1289 1273">The base unit should be installed in a clean, dry environment.</p> <p data-bbox="514 1321 898 1352">InterSense IS-300 Ex. 3 at 12.</p>	InertiaCubes (up to 4)	via cable attached to the InertiaCubes	Power	via 12V DC power supply.	User's Computer	via null modem RS232 cable
InertiaCubes (up to 4)	via cable attached to the InertiaCubes						
Power	via 12V DC power supply.						
User's Computer	via null modem RS232 cable						

Exhibit A-15


CLAIM 50	InterSense IS-300
	<p data-bbox="527 253 1680 358">InertiaCube Number InterSense trackers support up to 4 InertiaCubes. You must assign an InertiaCube to the station in order to track orientation.</p> <p data-bbox="512 415 898 444">InterSense IS-300 Ex. 3 at 23.</p> <div data-bbox="764 500 1218 805">  </div> <div data-bbox="527 824 1400 997" style="border: 2px solid red; padding: 5px;"> <p>IS-300</p> <p>The IS-300 is a 3-Degree Of Freedom (DOF) tracker. It obtains its primary motion sensing data using a miniature solid-state inertial measurement unit (InertiaCube) which senses angular rate of rotation, gravity and earth components along three perpendicular axes. The angular rates are integrated to obtain the orientation (yaw, pitch, and roll) of the sensor. Gravitometer and compass measurements are used to prevent the accumulation of gyroscopic drift.</p> </div> <p data-bbox="512 1008 898 1037">InterSense IS-300 Ex. 3 at 17.</p> <p data-bbox="512 1076 1965 1105"><i>See Disclosures with respect to Claim 1, supra; see also Defendants' Invalidity Contentions for further discussion.</i></p>

Exhibit A-15

HH. INDEPENDENT CLAIM 54

CLAIM 54	InterSense IS-300
[54.pre] A tracking system comprising	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, a tracking system. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>
[54.a] a sourceless orientation tracker for mounting on a user's head, and	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, a sourceless orientation tracker for mounting on a user's head. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

Exhibit A-15

CLAIM 54	InterSense IS-300
	<p>12/8/21, 4:14 PM IS-300 Pro Precision Motion Tracker</p> <p>The Wayback Machine - https://web.archive.org/web/20021017040949/http://intersense.com:80/products/prec/is...</p> <div style="display: flex; justify-content: space-between;"> <div data-bbox="520 289 697 987" style="width: 25%;">  <p style="writing-mode: vertical-rl; transform: rotate(180deg);">COMPANY APPLICATIONS PRODUCTS NEWS SUPPORT CONTACT US</p> <p style="text-align: center;">HOME</p>  <p>INTERSENSE Tel 781 270 0090 Fax 781 229 8995 info@ISENSE.com</p> </div> <div data-bbox="718 289 1402 987" style="width: 75%;"> <h2 style="margin: 0;">INTERSENSE</h2> <p style="text-align: right; margin: 0;">WE BRING 3D TO LIFE</p> <p style="margin: 5px 0;">PRODUCTS InertiaCube2 IS-300 Pro IS-600 Mark 2 IS-600 Mark 2 Plus IS-900 INTERTRAX2 </p> <p style="margin: 0;">INTERTRAX2 Headsets Distributors</p> <h3 style="margin: 10px 0;">IS-300 Pro Precision Motion Tracker</h3> <div style="border: 2px solid red; padding: 5px; margin: 5px 0;"> <p>THE WORLD'S FASTEST AND SMOOTHEST HEAD AND HAND ORIENTATION TRACKER.</p> </div> <p style="margin: 10px 0;"><i>Make slow, jittery virtual environments history. Now high-fidelity tracking with the ease-of-use, freedom and robustness of sourceless inertial technology is here. Enhance simulator performance and realism with the IS-300 from InterSense.</i></p> <div style="display: flex; align-items: center; justify-content: center;">  </div> <p style="margin: 10px 0;">DOWNLOAD THE PDF FILE FOR ADDITIONAL INFORMATION AND SPECIFICATIONS </p> <ul style="list-style-type: none"> Fast & Smooth Motion Prediction Immune to Interference Unlimited Range </div> </div>

Exhibit A-15

CLAIM 54

InterSense IS-300



- Fast & Smooth
- Motion Prediction
- Immune to Interference
- Unlimited Range

IS-300 Precision Motion Tracker

The world's fastest and smoothest head and hand orientation tracker.

Slow, jittery virtual environments are now a thing of the past. For the first time, high-fidelity tracking with all the ease-of-use, freedom and robustness inherent in sourceless inertial technology is now possible. Simulator performance and realism are greatly enhanced with the IS-300 from InterSense.

Jitter-Free.

The InterSense IS-300 tracker virtually eliminates the jitter common to other systems. This has been a major deficiency and source of simulator sickness in immersive head-mounted display applications.

Fast Response.

The InterSense IS-300 PRO offers industry leading update rates of up to 500 Hz, for the world's lowest latency tracking. Tracker-induced lag is removed from your virtual environment.

Distortion-Free.

Our patented inertial sensing technology is not susceptible to the electromagnetic interference you've come to expect from

competitive tracking technologies. So the InterSense IS-300 offers smooth, steady response, even in noisy, metal-cluttered environments.

Unlimited Range.

The IS-300 is completely sourceless. This means no setup, no line-of-sight constraints and virtually unlimited operating range. The signal processor is small enough to wear on a belt for tetherless application.

Motion Prediction.

The IS-300 PRO can predict motion up to 50 ms in the future, which compensates for graphics rendering delays and further contributes to eliminating simulator lag. InterSense is

the only company to employ the proven benefits of inertial angular rate and acceleration sensors to provide accurate feed-forward motion prediction.

No Slop or Drift.

InterSense's proprietary micro-machined inertial sensor unit and signal processing virtually eliminates the sloshy response common to inclinometers and the accumulation of drift error that plagues ordinary gyroscopes.

Software Compatibility.

If your application uses software that supports industry-standard trackers, you won't have to change a line of code to use the IS-300!



InterSense IS-300 Ex. 2.

Exhibit A-15


CLAIM 54	InterSense IS-300
	<p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>
<p>[54.b] a position tracker adapted to track a position of a first localized feature associated with a limb of the user relative to the user's head.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, a position tracker adapted to track a position of a first localized feature associated with a limb of the user relative to the user's head. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <div data-bbox="512 573 1417 1320"> <p>12/8/21, 4:14 PM IS-300 Pro Precision Motion Tracker</p> <p>The Wayback Machine - https://web.archive.org/web/20021017040949/http://intersense.com:80/products/prec/is...</p>  <p>InterSense IS-300 Ex. 1.</p> </div>

Exhibit A-15

CLAIM 54

InterSense IS-300



IS-300 Precision Motion Tracker

The world's fastest and smoothest head and hand orientation tracker.

Slow, jittery virtual environments are now a thing of the past. For the first time, high-fidelity tracking with all the ease-of-use, freedom and robustness inherent in sourceless inertial technology is now possible. Simulator performance and realism are greatly enhanced with the IS-300 from InterSense.

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Our patented inertial sensing technology is not susceptible to the electromagnetic interference you've come to expect from

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Unlimited Range.

The IS-300 is completely sourceless. This means no setup, no line-of-sight constraints and virtually unlimited operating range. The signal processor is small enough to wear on a belt for tetherless application.

Motion Prediction.

The IS-300 PRO can predict motion up to 50 ms in the future, which compensates for graphics rendering delays and further contributes to eliminating simulator lag. InterSense is

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InterSense's proprietary micro-machined inertial sensor unit and signal processing virtually eliminates the sloshy response common to inclinometers and the accumulation of drift error that plagues ordinary gyroscopes.

Software Compatibility.

If your application uses software that supports industry-standard trackers, you won't have to change a line of code to use the IS-300!



InterSense IS-300 Ex. 2.

Exhibit A-15

CLAIM 54	InterSense IS-300																											
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Degrees of Freedom	Yaw, pitch, and roll																											
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	IS-300	IS-300 Pro																										
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Number of InertiaCube Sensors:	1	up to 4																										
Interface:	RS-232C with selectable baud rates to 115, 200																											
Protocol:	Compatible with industry-standard protocol (FASTRAK™)																											

Exhibit A-15


CLAIM 54	InterSense IS-300						
	<p data-bbox="541 240 882 332">3 Setting up your new IS-300</p> <p data-bbox="541 386 810 414">3.1 IS-300 Components</p> <div data-bbox="525 446 1291 966">  <p data-bbox="541 495 640 516">IS-300 Pro</p> <p data-bbox="1207 454 1270 475">IS-300</p> <p data-bbox="531 917 724 961">ISDEMO Configuration Software</p> <p data-bbox="1192 925 1291 946">InertiaCube</p> </div> <p data-bbox="541 1088 688 1109">IS-300 Base Unit</p> <p data-bbox="793 1088 1285 1133">The base unit is the processing engine of the IS-300 system. It has the following connections:</p> <table border="1" data-bbox="793 1144 1285 1242"> <tr> <td>InertiaCubes (up to 4)</td> <td>via cable attached to the InertiaCubes</td> </tr> <tr> <td>Power</td> <td>via 12V DC power supply.</td> </tr> <tr> <td>User's Computer</td> <td>via null modem RS232 cable</td> </tr> </table> <p data-bbox="793 1250 1276 1271">The base unit should be installed in a clean, dry environment.</p> <p data-bbox="514 1323 898 1351">InterSense IS-300 Ex. 3 at 12.</p>	InertiaCubes (up to 4)	via cable attached to the InertiaCubes	Power	via 12V DC power supply.	User's Computer	via null modem RS232 cable
InertiaCubes (up to 4)	via cable attached to the InertiaCubes						
Power	via 12V DC power supply.						
User's Computer	via null modem RS232 cable						

Exhibit A-15

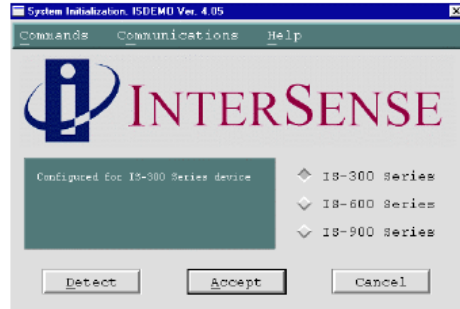
CLAIM 54	InterSense IS-300
	<div data-bbox="762 256 1218 563">  </div> <div data-bbox="531 586 1400 753" style="border: 2px solid red; padding: 5px;"> <p>IS-300 The IS-300 is a 3-Degree Of Freedom (DOF) tracker. It obtains its primary motion sensing data using a miniature solid-state inertial measurement unit (InertiaCube) which senses angular rate of rotation, gravity and earth components along three perpendicular axes. The angular rates are integrated to obtain the orientation (yaw, pitch, and roll) of the sensor. Gravitometer and compass measurements are used to prevent the accumulation of gyroscopic drift.</p> </div> <p>InterSense IS-300 Ex. 3 at 17.</p> <p>InertiaCube Number InterSense trackers support up to 4 InertiaCubes. You must assign and InertiaCube to the station in order to track orientation.</p> <p>InterSense IS-300 Ex. 3 at 23.</p> <p><i>See Disclosures with respect to Claim 1, supra; see also Defendants' Invalidity Contentions for further discussion.</i></p>

Exhibit A-15

II. INDEPENDENT CLAIM 56

CLAIM 56	InterSense IS-300
[56.pre] A system comprising:	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, a system. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>
[56.a] mounting a first inertial sensor on a user's head;	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, mounting a first inertial sensor on a user's head. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

Exhibit A-15

CLAIM 56	InterSense IS-300
	<p>12/8/21, 4:14 PM IS-300 Pro Precision Motion Tracker</p> <p>The Wayback Machine - https://web.archive.org/web/20021017040949/http://intersense.com:80/products/prec/is...</p> <div style="display: flex; justify-content: space-between;"> <div data-bbox="520 289 697 987" style="width: 25%;">  <p style="writing-mode: vertical-rl; transform: rotate(180deg);">COMPANY APPLICATIONS PRODUCTS NEWS SUPPORT CONTACT US</p> <p style="text-align: center;">HOME</p>  <p>INTERSENSE Tel 781 270 0090 Fax 781 229 8995 info@intersense.com</p> </div> <div data-bbox="718 289 1402 987" style="width: 75%;"> <h2 style="margin: 0;">INTERSENSE</h2> <p style="text-align: right; margin: 0;">WE BRING 3D TO LIFE</p> <p style="margin: 5px 0;">PRODUCTS InertiaCube2 IS-300 Pro IS-600 Mark 2 IS-600 Mark 2 Plus IS-900 INTERTRAX2 </p> <p style="margin: 0;">INTERTRAX2 Headsets Distributors</p> <h3 style="margin: 10px 0;">IS-300 Pro Precision Motion Tracker</h3> <div style="border: 2px solid red; padding: 5px; margin: 5px 0;"> <p>THE WORLD'S FASTEST AND SMOOTHEST HEAD AND HAND ORIENTATION TRACKER.</p> </div> <p style="margin: 10px 0;"><i>Make slow, jittery virtual environments history. Now high-fidelity tracking with the ease-of-use, freedom and robustness of sourceless inertial technology is here. Enhance simulator performance and realism with the IS-300 from InterSense.</i></p> <div style="display: flex; align-items: center; justify-content: center;">  </div> <p style="margin: 10px 0;">DOWNLOAD THE PDF FILE FOR ADDITIONAL INFORMATION AND SPECIFICATIONS </p> <ul style="list-style-type: none"> Fast & Smooth Motion Prediction Immune to Interference Unlimited Range </div> </div>

Exhibit A-15

CLAIM 56

InterSense IS-300



- Fast & Smooth
- Motion Prediction
- Immune to Interference
- Unlimited Range

IS-300 Precision Motion Tracker

The world's fastest and smoothest head and hand orientation tracker.

Slow, jittery virtual environments are now a thing of the past. For the first time, high-fidelity tracking with all the ease-of-use, freedom and robustness inherent in sourceless inertial technology is now possible. Simulator performance and realism are greatly enhanced with the IS-300 from InterSense.

Jitter-Free.

The InterSense IS-300 tracker virtually eliminates the jitter common to other systems. This has been a major deficiency and source of simulator sickness in immersive head-mounted display applications.

Fast Response.

The InterSense IS-300 PRO offers industry leading update rates of up to 500 Hz, for the world's lowest latency tracking. Tracker-induced lag is removed from your virtual environment.

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Our patented inertial sensing technology is not susceptible to the electromagnetic interference you've come to expect from

competitive tracking technologies. So the InterSense IS-300 offers smooth, steady response, even in noisy, metal-cluttered environments.

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If your application uses software that supports industry-standard trackers, you won't have to change a line of code to use the IS-300!



InterSense IS-300 Ex. 2.

Exhibit A-15

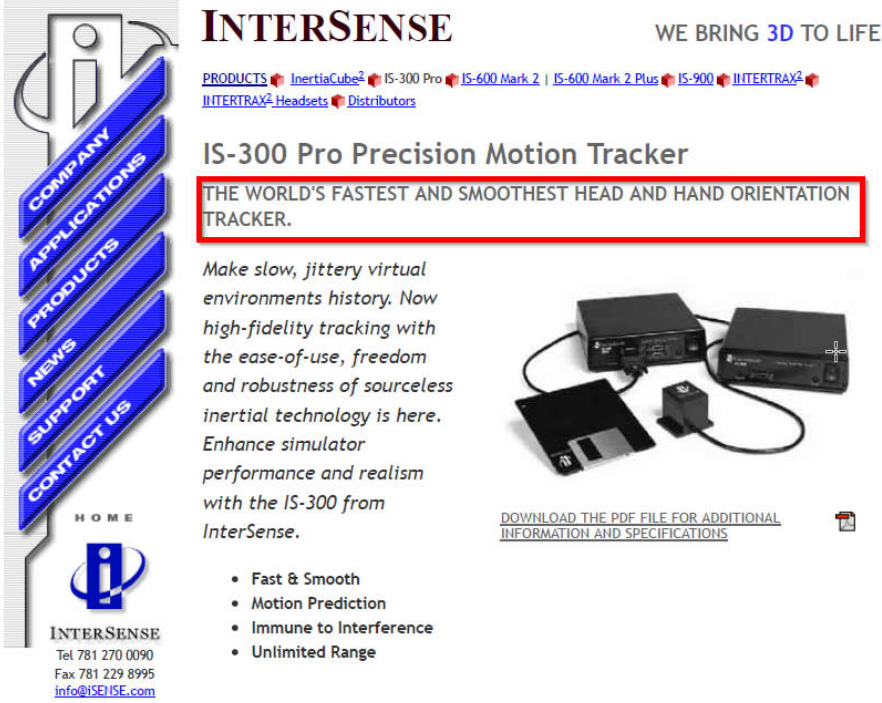
CLAIM 56	InterSense IS-300
	See Disclosures with respect to Claim 1, <i>supra</i> ; see also Defendants' Invalidity Contentions for further discussion.
[56.b] mounting a second inertial sensor elsewhere on the user's body or in an object held by the user; and	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, mounting a second inertial sensor elsewhere on the user's body or in an object held by the user. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p> <p>12/8/21, 4:14 PM IS-300 Pro Precision Motion Tracker The Wayback Machine - https://web.archive.org/web/20021017040949/http://intersense.com:80/products/prec/is...</p>  <p>INTERSENSE WE BRING 3D TO LIFE</p> <p>PRODUCTS InertiaCube² IS-300 Pro IS-600 Mark 2 IS-600 Mark 2 Plus IS-900 INTERTRAX² INTERTRAX² Headsets Distributors</p> <p>IS-300 Pro Precision Motion Tracker</p> <p>THE WORLD'S FASTEST AND SMOOTHEST HEAD AND HAND ORIENTATION TRACKER.</p> <p><i>Make slow, jittery virtual environments history. Now high-fidelity tracking with the ease-of-use, freedom and robustness of sourceless inertial technology is here. Enhance simulator performance and realism with the IS-300 from InterSense.</i></p> <ul style="list-style-type: none"> • Fast & Smooth • Motion Prediction • Immune to Interference • Unlimited Range <p>InterSense IS-300 Ex. 1.</p>

Exhibit A-15

CLAIM 56

InterSense IS-300



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InterSense IS-300 Ex. 2.

Exhibit A-15

CLAIM 56	InterSense IS-300																																					
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Exhibit A-15


CLAIM 56	InterSense IS-300						
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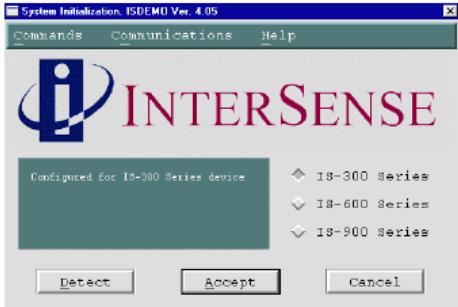
CLAIM 56	InterSense IS-300
	 <p><u>IS-300</u> The IS-300 is a 3-Degree Of Freedom (DOF) tracker. It obtains its primary motion sensing data using a miniature solid-state inertial measurement unit (InertiaCube) which senses angular rate of rotation, gravity and earth components along three perpendicular axes. The angular rates are integrated to obtain the orientation (yaw, pitch, and roll) of the sensor. Gravitometer and compass measurements are used to prevent the accumulation of gyroscopic drift.</p> <p>InterSense IS-300 Ex. 3 at 17.</p> <p><i>See</i> Disclosures with respect to Claim 1, <i>supra</i>; <i>see also</i> Defendants' Invalidity Contentions for further discussion.</p>
[56.c] tracking the position of one inertial sensor relative to the other.	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, tracking the position of one inertial sensor relative to the other. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

Exhibit A-15

CLAIM 56	InterSense IS-300
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Exhibit A-15

CLAIM 56

InterSense IS-300



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- Motion Prediction
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InterSense IS-300 Ex. 2.

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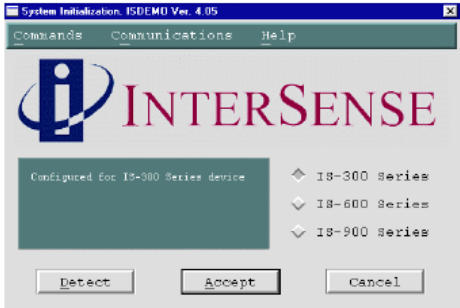
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JJ. DEPENDENT CLAIM 57

CLAIM 57	InterSense IS-300
<p>[57] The method of claim 56, further comprising:</p> <p>sensing data at the first and second inertial sensors and using the sensed data to track the position of one inertial</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 56, further comprising sensing data at the first and second inertial sensors and using the sensed data to track the position of one inertial sensor relative to the other. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p>See, e.g.:</p>

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CLAIM 57	InterSense IS-300
<p>sensor relative to the other.</p>	<p>12/8/21, 4:14 PM IS-300 Pro Precision Motion Tracker The Wayback Machine - https://web.archive.org/web/20021017040949/http://intersense.com:80/products/prec/is...</p>  <p>INTERSENSE WE BRING 3D TO LIFE</p> <p>PRODUCTS InertiaCube2 IS-300 Pro IS-600 Mark 2 IS-600 Mark 2 Plus IS-900 INTERTRAX2 INTERTRAX2 Headsets Distributors</p> <p>IS-300 Pro Precision Motion Tracker</p> <p>THE WORLD'S FASTEST AND SMOOTHEST HEAD AND HAND ORIENTATION TRACKER.</p> <p><i>Make slow, jittery virtual environments history. Now high-fidelity tracking with the ease-of-use, freedom and robustness of sourceless inertial technology is here. Enhance simulator performance and realism with the IS-300 from InterSense.</i></p> <ul style="list-style-type: none"> • Fast & Smooth • Motion Prediction • Immune to Interference • Unlimited Range <p>InterSense IS-300 Ex. 1.</p>

Exhibit A-15

CLAIM 57

InterSense IS-300



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Angular Range	All orientations																											
Maximum Angular Rate:	1200°/sec																											
Angular Resolution:	0.02° RMS																											
Angular Accuracy:	1.0° RMS																											
Dynamic Accuracy:	3.0° RMS																											
Update Rate:	up to 500Hz																											
	IS-300	IS-300 Pro																										
Prediction:	NA	0-50ms																										
Number of InertiaCube Sensors:	1	up to 4																										
Interface:	RS-232C with selectable baud rates to 115, 200																											
Protocol:	Compatible with industry-standard protocol (FASTRAK™)																											

Exhibit A-15


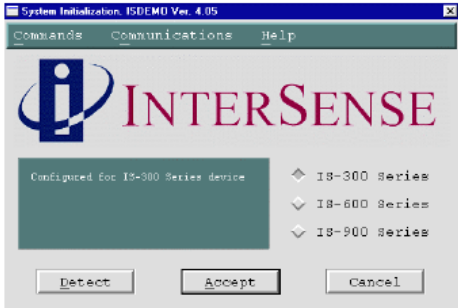
CLAIM 57	InterSense IS-300						
	<p data-bbox="541 245 884 329">3 Setting up your new IS-300</p> <p data-bbox="541 391 810 412">3.1 IS-300 Components</p>  <p data-bbox="541 1089 688 1110">IS-300 Base Unit</p> <p data-bbox="793 1089 1289 1133">The base unit is the processing engine of the IS-300 system. It has the following connections:</p> <table border="1" data-bbox="793 1146 1289 1243"> <tr> <td data-bbox="793 1157 968 1179">InertiaCubes (up to 4)</td> <td data-bbox="968 1157 1289 1179">via cable attached to the InertiaCubes</td> </tr> <tr> <td data-bbox="793 1179 968 1200">Power</td> <td data-bbox="968 1179 1289 1200">via 12V DC power supply.</td> </tr> <tr> <td data-bbox="793 1200 968 1221">User's Computer</td> <td data-bbox="968 1200 1289 1221">via null modem RS232 cable</td> </tr> </table> <p data-bbox="793 1252 1289 1273">The base unit should be installed in a clean, dry environment.</p> <p data-bbox="514 1325 898 1352">InterSense IS-300 Ex. 3 at 12.</p>	InertiaCubes (up to 4)	via cable attached to the InertiaCubes	Power	via 12V DC power supply.	User's Computer	via null modem RS232 cable
InertiaCubes (up to 4)	via cable attached to the InertiaCubes						
Power	via 12V DC power supply.						
User's Computer	via null modem RS232 cable						


Exhibit A-15

CLAIM 57	InterSense IS-300
	 <p><u>IS-300</u> The IS-300 is a 3-Degree Of Freedom (DOF) tracker. It obtains its primary motion sensing data using a miniature solid-state inertial measurement unit (InertiaCube) which senses angular rate of rotation, gravity and earth components along three perpendicular axes. The angular rates are integrated to obtain the orientation (yaw, pitch, and roll) of the sensor. Gravitometer and compass measurements are used to prevent the accumulation of gyroscopic drift.</p> <p>InterSense IS-300 Ex. 3 at 17.</p> <p><i>See also</i> Defendants' Invalidity Contentions for further discussion.</p>

KK. DEPENDENT CLAIM 58

CLAIM 58	InterSense IS-300
<p>[58] The method of claim 57, wherein tracking the position of the inertial sensor is done without reference to any signal received from a source not mounted on or held by the user.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 57, wherein tracking the position of the inertial sensor is done without reference to any signal received from a source not mounted on or held by the user. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p><i>See, e.g.:</i></p>

Exhibit A-15

CLAIM 58	InterSense IS-300
	<p>12/8/21, 4:14 PM IS-300 Pro Precision Motion Tracker</p> <p>The Wayback Machine - https://web.archive.org/web/20021017040949/http://intersense.com:80/products/prec/is...</p> <div style="display: flex; justify-content: space-between;"> <div data-bbox="520 365 693 1055" style="width: 25%;">  <p>COMPANY APPLICATIONS PRODUCTS NEWS SUPPORT CONTACT US</p> <p>HOME</p> <p>INTERSENSE Tel 781 270 0090 Fax 781 229 8995 info@ISENSE.com</p> </div> <div data-bbox="714 365 1386 1055" style="width: 75%;"> <div style="display: flex; justify-content: space-between;"> <div> <p>INTERSENSE</p> <p>PRODUCTS InertiaCube2 IS-300 Pro IS-600 Mark 2 IS-600 Mark 2 Plus IS-900 INTERTRAX2 INTERTRAX2 Headsets Distributors</p> </div> <div> <p>WE BRING 3D TO LIFE</p> </div> </div> <h2 style="text-align: center;">IS-300 Pro Precision Motion Tracker</h2> <div style="border: 2px solid red; padding: 5px; text-align: center;"> <p>THE WORLD'S FASTEST AND SMOOTHEST HEAD AND HAND ORIENTATION TRACKER.</p> </div> <p><i>Make slow, jittery virtual environments history. Now high-fidelity tracking with the ease-of-use, freedom and robustness of sourceless inertial technology is here. Enhance simulator performance and realism with the IS-300 from InterSense.</i></p> <div style="display: flex; align-items: center; justify-content: center;">  <div style="margin-left: 20px;"> <p>DOWNLOAD THE PDF FILE FOR ADDITIONAL INFORMATION AND SPECIFICATIONS</p> </div> </div> <ul style="list-style-type: none"> Fast & Smooth Motion Prediction Immune to Interference Unlimited Range </div> </div>

InterSense IS-300 Ex. 1.

Exhibit A-15

CLAIM 58

InterSense IS-300



- Fast & Smooth
- Motion Prediction
- Immune to Interference
- Unlimited Range

IS-300 Precision Motion Tracker

The world's fastest and smoothest head and hand orientation tracker.

Slow, jittery virtual environments are now a thing of the past. For the first time, high-fidelity tracking with all the ease-of-use, freedom and robustness inherent in sourceless inertial technology is now possible. Simulator performance and realism are greatly enhanced with the IS-300 from InterSense.

Jitter-Free.

The InterSense IS-300 tracker virtually eliminates the jitter common to other systems. This has been a major deficiency and source of simulator sickness in immersive head-mounted display applications.

Fast Response.

The InterSense IS-300 PRO offers industry leading update rates of up to 500 Hz, for the world's lowest latency tracking. Tracker-induced lag is removed from your virtual environment.

Distortion-Free.

Our patented inertial sensing technology is not susceptible to the electromagnetic interference you've come to expect from

competitive tracking technologies. So the InterSense IS-300 offers smooth, steady response, even in noisy, metal-cluttered environments.

Unlimited Range.

The IS-300 is completely sourceless. This means no setup, no line-of-sight constraints and virtually unlimited operating range. The signal processor is small enough to wear on a belt for tetherless application.

Motion Prediction.

The IS-300 PRO can predict motion up to 50 ms in the future, which compensates for graphics rendering delays and further contributes to eliminating simulator lag. InterSense is

the only company to employ the proven benefits of inertial angular rate and acceleration sensors to provide accurate feed-forward motion prediction.

No Slop or Drift.

InterSense's proprietary micro-machined inertial sensor unit and signal processing virtually eliminates the sloshy response common to inclinometers and the accumulation of drift error that plagues ordinary gyroscopes.

Software Compatibility.

If your application uses software that supports industry-standard trackers, you won't have to change a line of code to use the IS-300!



InterSense IS-300 Ex. 2.

Exhibit A-15

CLAIM 58	InterSense IS-300
	<i>See</i> Disclosures with respect to Claim 57; <i>see also</i> Defendants' Invalidity Contentions for further discussion.

LL. DEPENDENT CLAIM 59

CLAIM 59	InterSense IS-300
<p>[59] The method of claim 58, wherein the drift of the relative position or orientation of the second inertial sensor relative to the first inertial sensor is corrected by measurements between devices on the user's head and devices elsewhere on the users body.</p>	<p>At least under Plaintiffs' apparent infringement theory, InterSense IS-300 discloses, either expressly or inherently, the method of claim 58, wherein the drift of the relative position or orientation of the second inertial sensor relative to the first inertial sensor is corrected by measurements between devices on the user's head and devices elsewhere on the users body. In the alternative, this element would be obvious over InterSense IS-300 in light of the other references disclosed in Defendants' Invalidity Contentions and/or the knowledge of one of ordinary skill in the art.</p> <p>1 Theory of Operations</p> <p>Congratulations for buying the finest orientation tracker on the market! This technology offers you several advantages:</p> <ul style="list-style-type: none"> • Very low latency • Unlimited range • Prediction based on directly sensed motion derivatives • Smooth, jitter-free tracking <p>The IS-300 is an inertial 3-DOF (Degree of Freedom) orientation tracking system. It obtains its primary motion sensing using a miniature solid-state inertial measurement unit (called an InertiaCube™) which senses angular rate of rotation, gravity and earth magnetic field along three perpendicular axes. The angular rates are integrated to obtain the orientation (yaw, pitch, and roll) of the sensor. Gravitometer and compass measurements are used to prevent the accumulation of gyroscopic drift.</p> <p>InterSense IS-300 Ex. 3 at Section 1.</p>

Exhibit A-15

CLAIM 59	InterSense IS-300
	<p>1.1 InertiaCube™ integrated inertial instrument</p> <p>The InertiaCube is a monolithic part based on micro-electro-mechanical systems (MEMS) technology involving no spinning wheels that might generate noise, inertial forces and mechanical failures. The InertiaCube simultaneously measures 9 physical properties, namely angular rates, linear accelerations, and magnetic field components along all 3 axes. Micro-miniature vibrating elements are employed to measure all the angular rate components and linear accelerations, with integral electronics and solid-state magnetometers. The magnetometers are included for optional yaw <u>drift</u> correction in the sourceless inertial orientation mode only. The geometry and composition of these elements are proprietary, but the functional performance of the multisensor unit can be understood sufficiently by reference to the equivalent diagram in Figure 1.</p> <p>Figure 2 illustrates the basic physical principal underlying all Coriolis vibratory gyros. Suppose that the tines of the tuning fork are driven by an electrostatic, electromagnetic or piezoelectric drive to oscillate in the plane of the fork. When the whole fork is rotated about its axis, the tines will experience a Coriolis force $\underline{F} = \underline{\omega} \times \underline{v}$ pushing them to vibrate perpendicular to the plane of the fork. The amplitude of this out-of-plane vibration is proportional to the input angular rate, and it is sensed by capacitive or inductive or piezoelectric means to measure the angular rate.</p> <p>By way of comparison, a conventional inertial measurement unit (IMU) senses 6 of these properties using 6 separate instruments (3 rate gyros and 3 linear accelerometers) each of which by itself would typically be larger, heavier, and more expensive than an InertiaCube. Unlike conventional rate gyro and accelerometer instruments, which must be carefully aligned on a precision machined triaxial mounting block, the InertiaCube is a monolithic device with its orthogonal outputs factory calibrated to precise alignment. Being a digital device, the InertiaCube cabling and connectorization is relatively non-critical, and the cables can be extended up to 30 feet without fear of contaminating sensitive analog signals. The power consumption of the InertiaCube is 30 mA at 9V, which makes it suitable for prolonged operation from a small battery in future wireless applications. Figure 3 shows an InertiaCube next to a floppy disk for scale.</p> <p>InterSense IS-300 Ex. 3 at Section 1.1.</p>

Exhibit A-15

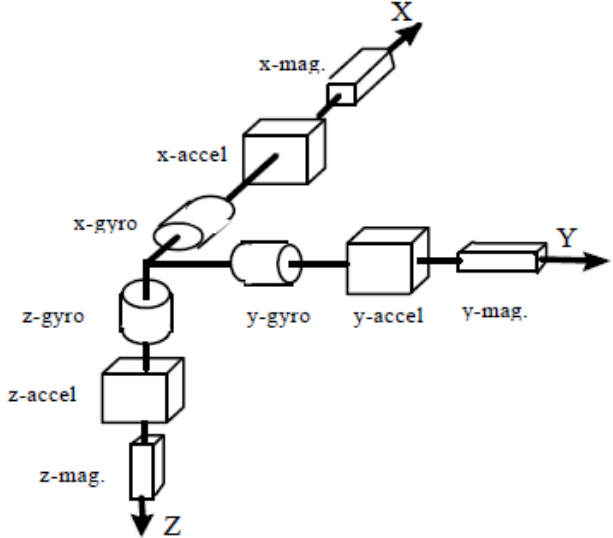
CLAIM 59	InterSense IS-300
	 <p>Figure 1: Functional diagram of InertiaCube</p> <p>InterSense IS-300 Ex. 3 at Figure 1.</p>

Exhibit A-15

CLAIM 59	InterSense IS-300
	<div data-bbox="577 259 982 673" data-label="Image"> </div> <p data-bbox="520 678 1024 743">Figure 2: Principle of Coriolis vibratory Gyroscope</p> <p data-bbox="512 792 974 824">InterSense IS-300 Ex. 3 at Figure 2.</p> <p data-bbox="525 868 1411 933">1.2 3-DOF Gyroscopic Earth-stabilized Orientation Sensing (GEOS™) algorithms</p> <p data-bbox="520 971 1537 1214">Figure 3 shows the processing which is used to compute orientation using this sensor configuration. The basic computation of orientation from gyroscopic angular rates (in the top line of boxes) provides the very rapid dynamic response and high resolution of the system. The accelerometers and magnetometers are used to stabilize the orientation to the earth's gravitational and magnetic fields, thus eliminating the gradual but unbounded accumulation of gyroscopic drift errors. The Kalman filter uses an ever-evolving adaptive algorithm to discard the portion of the accelerometer measurements which are due to actual motion instead of gravity. This is a very important step, because otherwise horizontal accelerations would result in very large</p> <p data-bbox="520 1274 1579 1372">transient pitch and roll errors known as “slosh”. The low cost sourceless trackers used in early consumer HMDs are inclinometer/compass devices, and are thus intrinsically slosh-prone to the point of being uncomfortable to use.</p>

Exhibit A-15

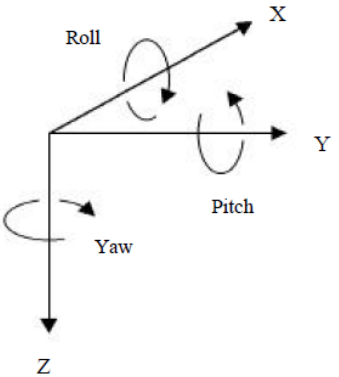
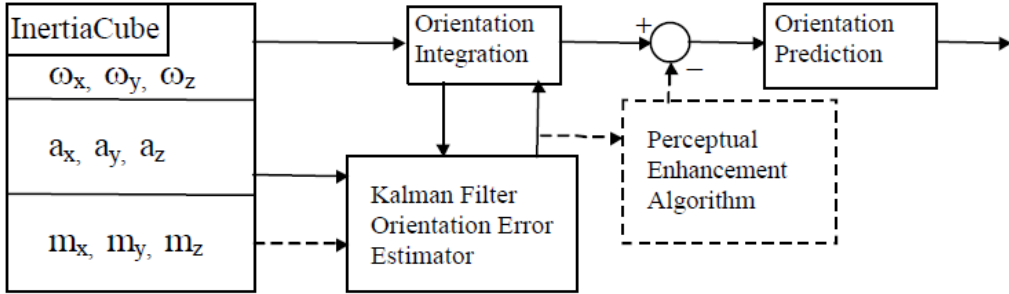
CLAIM 59	InterSense IS-300
	<p>In GEOS mode, the reference frame (hereafter referred to as Navigation frame or Nav frame or N frame) is the locally-level geographic frame with its x-axis pointing north, y-axis east, and z-axis down. The Euler angles reported by the tracker can be described as a sequence of rotations applied to the InertiaCube starting with its body axes initially aligned with the Nav frame axes and resulting in the current orientation. The sequence starts with a rotation by (+yaw) about the Z axis, followed by a rotation by (+pitch) about the new Y axis (i.e. body frame axis), followed by a rotation by (+roll) about the new X axis (i.e. body frame x axis)</p>  <p>The line from the magnetic field sensor outputs of the InertiaCube to the Kalman filter is a dotted line to indicate that the use of the magnetometers may optionally be disabled. The accelerometer measurements are sufficient to correct all the drift in pitch and roll, and the geomagnetic compassing function is only used to correct drift in yaw. In many fly-through applications absolute yaw referenced to magnetic north is not important and relative yaw tracking is sufficient. This is the case when the user can turn to face an object or rotate the virtual world to bring that object into view. In these situations it may be desirable to turn magnetic yaw compensation off if there are large variations in the direction of magnetic north over the tracking area. With the compassing turned off, the yaw value will drift a few degrees per minute. This drift is too slow to notice while it is happening, but the cumulative yaw error may eventually become noticeable if the user is seated in a fixed chair, and then it may be necessary to send a Heading Boresight command. When yaw compensation mode is disabled,</p>

Exhibit A-15

CLAIM 59	InterSense IS-300
	<p>the Nav frame axes are aligned instead to pseudo-north, pseudo-east, and down, where pseudo-north is simply the direction the InertiaCube x-axis was facing on power-up or after a Heading Boresight command.</p> <p>The Perceptual Enhancement Algorithm (PEA) indicated with dotted lines is an option provided for HMD tracking and similar applications which is designed to make the output data minimize perceivable errors rather than minimize mean square errors. Because the human observer is more sensitive to jitter and drift when still or moving slowly, the PEA uses adaptive filtering to preferentially suppress these effects as the head slows down. Interestingly, the PEA only filters the corrections to orientation made by the error estimator, and not the orientation signals themselves. Therefore, the trade-off is increased dynamic error, and not increased latency. If a head at rest suddenly makes a rapid movement, there will be no additional latency imposed by the PEA in the all-important head-motion-to-visual-feedback sensorimotor loop. The Perceptual Enhancement is a constantly evolving family of fuzzy rule-based algorithms which have been quite successful in eliminating most perceivable jitter and drift without introducing any latency. For information on controlling the PEA see the Perceptual Enhancement Level command in sections 4.4.2 and 5.2.2.</p> <p>InterSense IS-300 Ex. 3 at Section 1.2.</p>  <p style="text-align: center;">Figure 3: GEOS mode tracking algorithm</p> <p>InterSense IS-300 Ex. 3 at Figure 1.</p> <p><i>See Disclosures with respect to Claim 57; see also Defendants' Invalidity Contentions for further discussion.</i></p>